

DATA BRIEF

Federal Basic Research Share Grows During a Period of Declining R&D

by Ronald L.
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Basic research comprises 21 percent of the projected FY 1997 Federal R&D total, compared with its 18-percent share in 1992.

Federal obligations for research and development (R&D) and R&D plant will decrease an estimated 1 percent (4-percent decrease in inflation-adjusted 1992 dollars) to \$70 billion for fiscal year (FY) 1997, according to a survey of Federal agencies' budget projections conducted in 1996 (Table 1). However, agencies project a 2-percent increase in the research portion of the R&D total (a 0.4-percent decrease in constant 1992 dollars). Research would account for 42 percent of the FY 1997 R&D money. Basic research support will reach almost \$15 billion dollars, and applied research will total more than \$14 billion, according to the preliminary estimates. In constant 1992

dollars, basic research will decrease nearly 1 percent, and applied research will remain flat. As in the past, the Federal Government obligates the largest portion of its R&D dollars for development, which accounts for approximately 55 percent of the FY 1997 preliminary total R&D and R&D plant obligations. However, the development share of total R&D and R&D plant has decreased throughout the 1990's, having declined from its 64-percent share in FY 1990. Agencies project development funds to drop 4 percent (down 6 percent in constant 1992 dollars) from their FY 1996 level, to \$39 billion in FY 1997. R&D plant is slated to increase nearly 6 percent (up more than 3 percent in constant

Table 1. Federal obligations for research and development and R&D Plant, by character of work: FYs 1990-97

Fiscal year	Total R&D and R&D plant	Basic research	Applied research	Development	R&D plant
(Millions of current dollars)					
1990.....	65,831	11,286	10,337	41,937	2,272
1991.....	64,148	12,171	11,798	37,327	2,853
1992.....	68,577	12,490	12,001	41,102	2,985
1993.....	70,415	13,399	13,491	40,424	3,101
1994.....	69,427	13,553	13,888	39,815	2,171
1995.....	71,012	13,896	14,678	40,181	2,257
1996 preliminary	71,048	14,482	14,096	40,499	1,971
1997 preliminary.....	70,149	14,732	14,441	38,890	2,085

(Millions of constant 1992 dollars)

1990.....	70,634	12,109	11,091	44,997	2,437
1991.....	65,996	12,521	12,137	38,402	2,935
1992.....	68,577	12,490	12,001	41,102	2,985
1993.....	68,630	13,060	13,150	39,399	3,022
1994.....	66,121	12,908	13,226	37,919	2,068
1995.....	65,996	12,914	13,641	37,343	2,097
1996 preliminary.....	64,530	13,154	12,803	36,784	1,790
1997 preliminary.....	62,133	13,049	12,791	34,447	1,847

SOURCE: NSF/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1995, 1996, and 1997.

Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/stats.htm>) For NSF's Telephonic Device for the Deaf, dial 703-306-0090. If you are a user of electronic mail and have access to the internet, you may order publications electronically. Send requests to pubs@nsf.gov. In your request, include the NSF publication number and title, your name, and a complete mailing address.

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1992 dollars) to \$2 billion. The statistics presented here are derived from the National Science Foundation's (NSF's) Annual Survey of Federal Funds for R&D, and are subject to change as Federal agencies' budgets are updated to reflect approved programs.

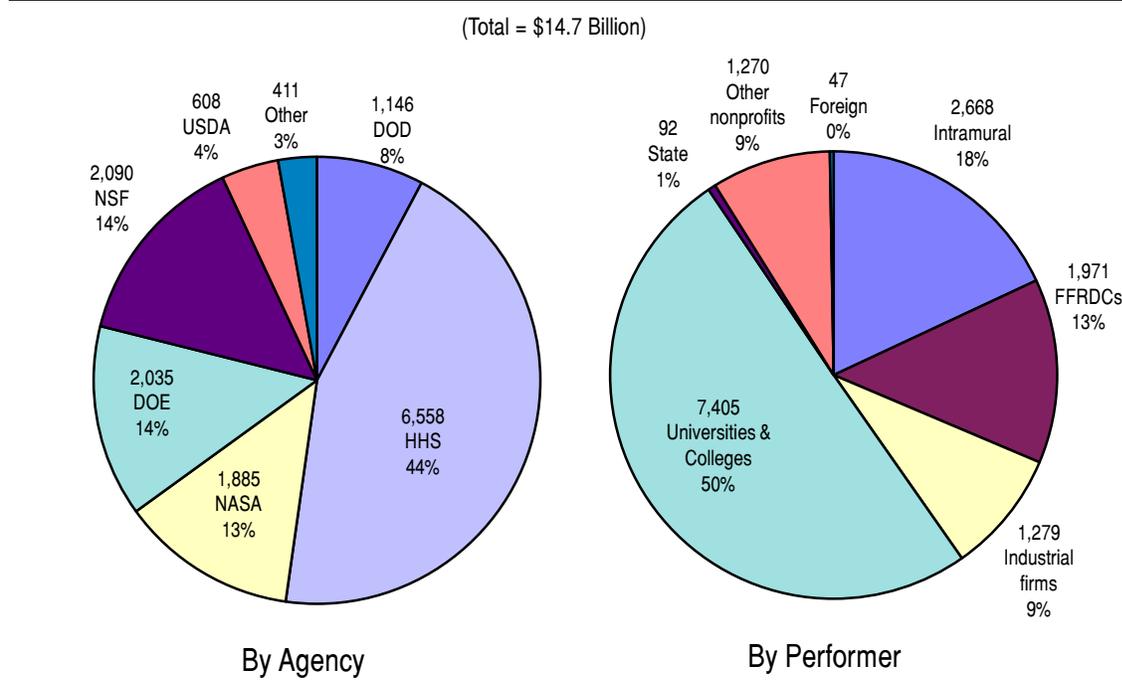
There is widespread support for basic research funding in both the Legislative and Executive branches of Government, as well as in academia and among scientific organizations. However, it is also recognized that such support needs to be balanced against budgetary constraints necessarily imposed on all Government projects, including R&D programs. The remainder of this Data Brief highlights recent survey data collected on Federal funding of basic research to better inform these ongoing budgetary discussions.

Agencies' Funding for Basic Research

The share of Federal R&D obligations directed to basic research has increased slowly since FY 1992. In FY 1992 basic

research comprised 18 percent of the total R&D. That percentage increased slightly each year and reaches 21 percent in FY 1997, according to preliminary estimates. Overall, Federal agencies report a 4-percent average annual rate of growth (1 percent in constant 1992 dollars) from FYs 1990-97. When adjusted for inflation, basic research funding has held steady at about \$13 billion since FY 1993. The six leading agencies providing funding for basic research will account for 97 percent of the Federal basic research total in FY 1997 (Chart 1). These agencies are the Department of Health and Human Services (HHS)(almost entirely at the National Institutes of Health), National Science Foundation (NSF), Department of Energy (DOE), National Aeronautics and Space Administration (NASA), Department of Defense (DOD), and Department of Agriculture (USDA). Of these six agencies only NASA reports an expected decrease in basic research funding for FY 1997, dropping 6 percent (down \$124 million). Each of the other five agencies expects strong to modest increases in basic research funding:

Chart 1. Distribution of Preliminary Federal Obligations for Basic Research by Agency, and by Performer: FY 1997



SOURCE: NSF/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1995, 1996, and 1997

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Federal agencies report that universities and colleges are to receive 50 percent of all Federal basic research funds in FY 1997 in spite of a projected 4.5-percent drop in basic research funds to the academic sector.

NSF (6 percent); DOE (4 percent); USDA (4 percent); HHS (2 percent); and the DOD (1 percent).

After adjusting for inflation, HHS expects its obligations for basic research to average 2-percent annual growth from FYs 1990-97. DOE would increase basic research funding second fastest, with just under 2-percent real dollar growth during the same time period. NSF reports a basic research funding growth rate of 1 percent and DOD reveals a flat rate. In real dollars, USDA and NASA expect slightly less funding for basic research in FY 1997 than was available in FY 1990.

Basic Research Performance

Universities and colleges, receiving 50 percent of the Federal basic research funds in FY 1997, might expect a 4.5-percent decrease in obligations to \$7.4 billion in that year (Chart 1). Intramural performers of basic research, which covers Federal in-house performance and costs associated with the planning and administration of both internal and external basic research programs by Federal personnel, are slated to receive 18 percent of all Federal basic research funds. This represents a 10.5-percent increase over FY 1996 funding,

reversing the 11-percent drop from FYs 1995-96. The largest Federal intramural basic research performers in FY 1997 include HHS, \$1.1 billion (nearly all from the National Institutes of Health); NASA, \$0.5 billion; USDA, \$0.4 billion (91 percent from the Agricultural Research Service), and DOD, \$0.3 billion (mostly from the three service agencies: Army, Navy, and Air Force) (Table 2). Federally Funded Research and Development Centers (such as Jet Propulsion Laboratory, Sandia National Laboratories and Lincoln Laboratory) will get 13 percent of the total basic research funds, or \$2 billion. Industrial firms are expected to receive 9 percent of the basic research, an increase of 4 percent over the FY 1996 funding level. Non-academic nonprofit organizations are to receive nearly 9 percent of the basic research funds, increasing more than \$0.2 billion (an increase of nearly 20 percent) over the FY 1996 funding level. State and local governments, which as a group will receive less than one percent of all Federal basic research funds, and foreign performers which will receive under a half percent of basic research funds, are each expected to receive large percentage increases for FY 1997, 31 percent and 13 percent, respectively.

Table 2. Preliminary Federal Obligations for Basic Research, by Agency and Performer: Fiscal Year 1997

(Millions of current dollars)

	Total	Intramural	Industrial Firms	All FFRDCs	Univ. & Colleges	Other Nonprofits	State & Local Governments	Foreign
Total.....	14,732	2,668	1,279	1,971	7,405	1,270	92	47
DOD.....	1,146	293	153	5	647	39	0	9
HHS.....	6,558	1,142	270	154	3,928	973	64	27
NASA.....	1,885	471	614	258	480	56	1	3
DOE.....	2,035	69	103	1,407	440	14	2	1
NSF.....	2,090	18	90	146	1,680	149	3	4
USDA.....	608	395	7	0	199	4	1	2
OTHER....	411	280	41	0	31	35	23	1

SOURCE: NSF/SRS, Survey of Federal Funds for Research and Development: Fiscal Years 1995, 1996, and 1997

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Survey Notes

The 33 Federal agencies that report R&D obligations to the Federal Funds survey submitted actual obligations for FY 1995 and preliminary data for FYs 1996-97. Data were reported during the period May through August 1996. Agencies can later revise the preliminary data on the basis of actual changes in the funding levels of R&D programs. Therefore, FYs 1996-97 obligations are subject to revision in the next survey cycle. Furthermore, agencies may provide changes in prior-year data to reflect program reclassifications. In recent years, agency-

reported revisions were extensive, reflecting the current uncertainty and flux in the Nation's R&D enterprise. For example, during the period February through November 1995, Federal agencies projected total R&D and R&D plant obligations of \$73 billion for FY 1995. As detailed in Table 1 of this Data Brief, agencies now report actual FY 1995 obligations of \$71 billion, nearly a 3-percent downward revision from earlier expectations.

The data presented in this Data Brief are being released in advance of comprehensive Detailed Statistical

Tables Report, *Federal Funds for Research and Development: Fiscal Years 1995, 1996, and 1997, Volume 45*.

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